

Title (en)
PROCESS FOR THE DIRECT PRODUCTION OF TUNGSTEN CARBIDE POWDERS OF VARIOUS GRAIN SIZES STARTING FROM SCHEELITE

Title (de)
VERFAHREN ZUR DIREKTSYNTHESE VON WOLFRAMCARBIDPULVERN MIT VERSCHIEDENEN TEILCHENGROSSEN AUS SCHEELIT

Title (fr)
PROCÉDÉ DE SYNTHÈSE DIRECTE DE POUDRES DE CARBURE DE TUNGSTÈNE DE TAILLES DE PARTICLES VARIÉES À PARTIR DE SCHEELITE

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Abstract (en)
The invention relates to a process which allows to obtain powders of tungsten carbide directly from tungsten ores belonging to the class of scheelite by carbothermic reduction carried out in non-drastic conditions with regard to the times and/or temperatures, and in which the obtained powders may have different particle size as said treatment conditions are varying. The process starts from powders of scheelite (CaWO_4) and carbon in proportions such as to have a maximum excess of carbon, compared to the expected conversion reaction, of about 5-6% by weight, mixed with the 0.4-6% by weight of powder of one or more transition metals of the former group VIIIB (now groups 8, 9 and 10), in particular Co, Ni or Fe, as the promoter of the conversion in carbide and/or as activator of the WC grain growth, and comprises a powder grinding step, a heat treatment step of the mixture of powders obtained by milling at temperatures between 900 and 1500°C in an inert atmosphere or under vacuum, and a step of purification of the resulting powder by leaching of residual oxides.

IPC 8 full level
C01B 32/949 (2017.01)

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Citation (applicant)

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Citation (search report)

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